PATENT APPLICATION
Mo-6801
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION OF	)
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CHRISTOPH GÜRTLER ET AL	) EXAMINING GROUP NO: 1621
	)
SERIAL NUMBER: 10/085,514	) EXAMINER: K. J. PUTTLITZ
	)
FILED: FEBRUARY 28, 2002	)
	)

TITLE: POLYISOCYANATES CONTAINING ACYLUREA GROUPS, A PROCESS FOR THEIR PRODUCTION AND THEIR USE

DECLARATION OF CHRISTOPH GÜRTLER

I, Christoph Gürtler, residing in Cologne, Germany, hereby declare as follows:

1) I studied chemistry at the University of Bonn from 1987 to 1993;

2) I received the degree of doctor rer. nat. at the University of Berlin in the year 1996;

3) I have been employed by Bayer AG, D-51368 Leverkusen, Germany, since 1997;

4) I have been working in the research field of Polyurethane coatings since 1999 and I am the inventor of the subject matter of the above-identified application; and

5) the following tests were carried out under my supervision and control:

Examples of yellowing carried out in the presence of various catalysts

604.8 g of hexamethylene diisocyanate and 11 mg of catalyst were initially introduced into a 1 l three-necked flask. 21.92 g of adipic acid and 9.41 g of azelaic acid were added to this mixture. After the addition was complete the temperature was adjusted to 120°C. Heating was carried out over the periods listed in the table below. Then the mixture was allowed to cool. The NCO value of the solution was about 43.4%. The reaction solution was subjected to thin-layer distillation (temperature: 130°C, pressure: 1.5×10^{-2} bar). 140 to 150 g of a product were obtained with the colour index indicated in the Table in [Apha] and a viscosity which in all cases was within a range of 2000 to 2400 mPas. The yield was between 22.5 and 23.5%, based on the isocyanate. The content of monomeric hexamethylene diisocyanate in the thin-layer-distilled product was about 0.1%.

These comparative experiments were carried out without the addition of BHT or Tinuvin 770 which are used to reduce coloration when the material is exposed to higher temperatures. So no adulteration took place.

The choice of the catalyst has an effect on colouring during the reaction. Thus magnesium, calcium and lathanoid salts – the catalysts used according to the invention - produce only slightly yellow products, whereas the catalysts of Brahm produce products which are more yellow.

#	Catalyst	Colour index after thin-layer distillation	Reaction time in hours
1	Magnesium perchlorate	65	12
2	Calcium acetate	70	11
3	Ytterbium triflate	70	11
4	Triethylamine	120	15
5	Iron II chloride	250	11
6	Tin II octate	110	15
7	Dibutyl tin oxide	110	15
8	Phosphoric acid	150	14

Only products with a colour index of below 100 (Apha) can be used commercially.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such wilful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed at Leverkusen, Germany, this 16 day of November, 2005.

C. Gürtler

CHRISTOPH GÜRTLER